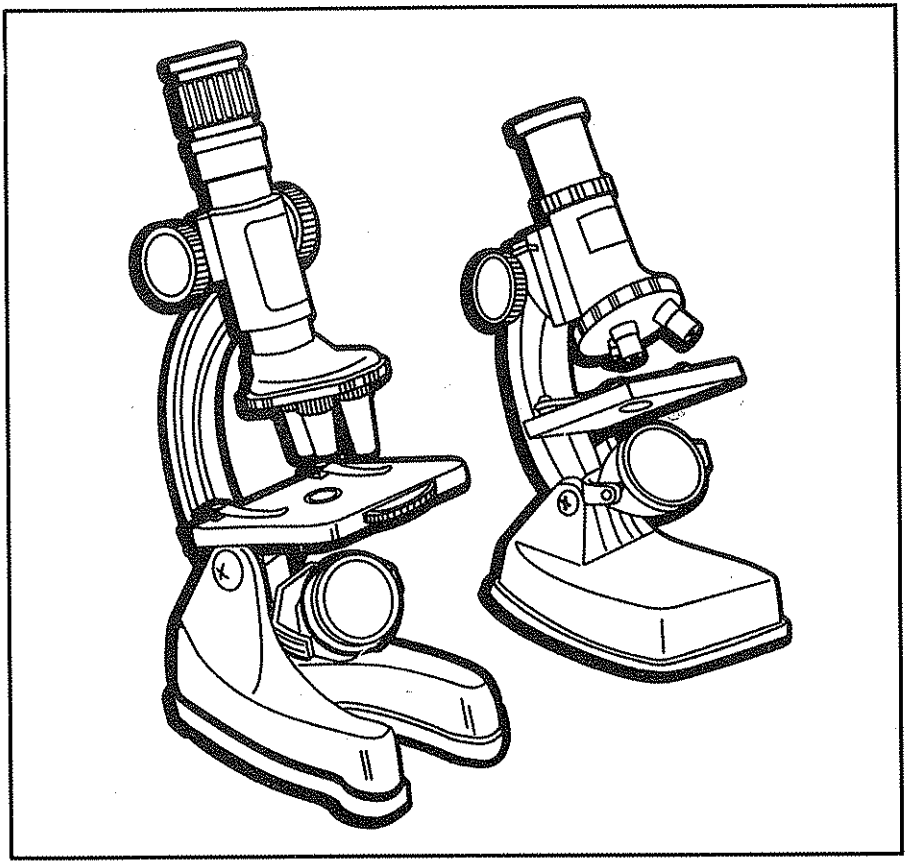


MICROSCOPE SET

INSTRUCTIONS

WARNING! Only for use by children over 8 years old. Only for use under the supervision of an adult.

CAUTION! Read the instructions before use, follow them and keep them for reference. Keep small children and animals away from experiments. Store the microscope set out of reach of small children. Eye protection for supervising adults is not included.

ADVICE FOR SUPERVISING ADULTS

a) Read and follow the instructions, the safety rules and the first aid information. Keep them for reference.

b) The incorrect use of chemicals can cause injury and damage to health. Only carry those preparations which are listed in the instructions.

c) This Microscope set is for use only by children over 8 years old.

d) Because children's abilities vary so much, even within age groups, supervising adults should exercise discretion as to which preparations are suitable and safe for them. The instructions should enable supervisors to assess any preparation to establish its suitability for a particular child.

e) The supervising adult should discuss the warnings and safety information with the children before commencing the preparations. Particular attention should be paid to the safe handling of chemicals if used.

f) The area surrounding the preparation of slides should be kept clear of any obstructions and from the storage of food. It should be in a good light and close to a water supply. A solid table with a heat resistant top should be provided.

g) A separate tin or bucket should be used for the disposal of solid waste materials. Any wasted solution should be poured down a drain but never into a sink.

IMPORTANT TELEPHONE NUMBERS

Poison Center:	
Hospital:	
Fire Department:	
Doctor:	

SAFETY INFORMATION

General First Aid Information

a) In case of eye contact: Wash the eye with plenty of water, holding the eye open if necessary. Seek immediate medical advice.

b) If swallowed: Wash the mouth with water, drink some fresh water. Do not induce vomiting. Seek immediate medical advice.

c) In case of inhalation - Move person to fresh air.

d) In case of skin contact and burns: Wash affected area with plenty of water for 5 minutes.

e) In case of a cut: Wash the cut with antiseptic solution (if not available, use clean water). Then put on a bandage. In case of any serious injury, you should get first aid treatment and inform a doctor as soon as possible.

In case of doubt seek medical advise without delay. Take the material together with the container with you. In case of injury, always seek medical advise.

SAFETY RULES

a) Do read these instructions before use, follow them and keep them for reference.

b) Do keep young children and animals, and those who are not wearing eye protection away from the experimental area.

c) Do always wear eye protection.

d) Do store microscope sets out of reach of young children.

e) Do clean all equipment after use.

f) Do wash hands after carrying out preparations.

g) Do not use any equipment which has not been supplied with the set.

h) Do not eat, drink or smoke in the experimental area.

i) Do not allow chemicals to come into contact with the eyes or mouth.

j) Do not put foodstuffs in used container. Dispose of immediately.

CAUTION FOR HANDLING

1) The vital part of the microscope is the lens. Therefore, sufficient care must be taken in handling the lens. If the lens gets dirty or dusty; wipe the lens surface with a clean lens tissue or soft cotton cloth. Do not rub the lens with a finger or dirty cloth, etc.

2) After the microscope set is used, it should be covered with a cloth and be put back into the box for screening from dust.

3) Microscope should be stored in a moisture free place. Moisture buildup on the light will cause a reduction in light intensity.

4) When a microscope is not used for a long period of time, remove the light source batteries.

INTRODUCTION TO A MICROSCOPIC WORLD

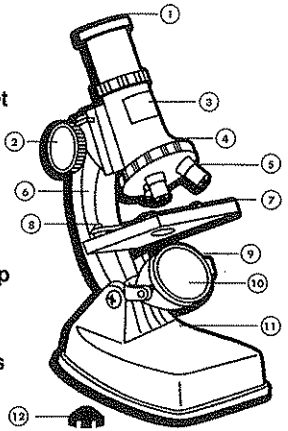
In this world there is an abundance of living things. Some are large enough to be seen with our own eyes, but a lot of others are so minute that millions can be squeezed on the head of a pin. Of course these tiny organisms can only be seen through a microscope.
The microscope was invented many years ago. Since then it has opened a wider field of research, involving many things as fascinating and as beautiful as you can imagine. Today, from the most elementary study of biology to the highly specialized fields of physiology, some form of microscope has to be used for the students to understand better the elaborate, complicated forms of either living organisms or static materials, which make up our living environment.

Your microscope will be either a source of fun for a long-time hobby or an opening door to advanced knowledge in various fields of science. We hope you will enjoy using it.

Battery installation

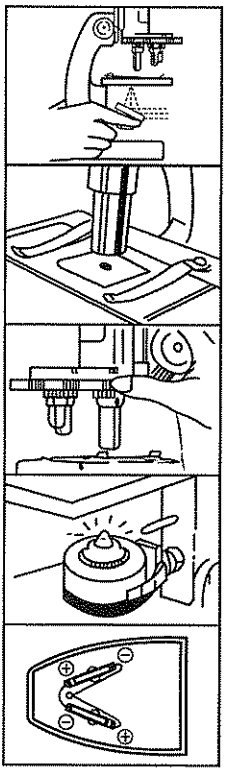
Unscrew the ballery door cover with a philips screwdriver.
Insert two 1.5V size "AA" batteries into the battery compartment.
Replace the battery cover and screw it back into place.

1. **Eyepiece**
2. **Focusing Knob**
3. **Body Tube**
4. **Revolving Turret**
5. **Objective Lens**
6. **Arm**
7. **Stage**
8. **Clip**
9. **Mirror**
10. **Illuminator Lamp**
11. **Base (Battery Case)**
12. **Condenser Lens Cap**



INSTRUCTIONS FOR USE OF MICROSCOPE

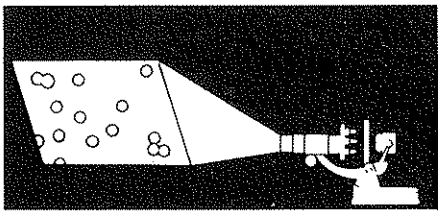
1. First tilt the arm and adjust the position of the reflector so that the light is fully caught by the mirror.
2. When the light is fully reflected by the mirror, as can be seen through the eyepiece, the microscope will be ready for observation.
3. Next, put the prepared slide on the stage and fix it in place with the clips.
4. Now decide what magnification to use. The greater the length of the objective lens the greater the magnification. Observation is generally made starting at a low setting.



5. In order to change the magnification turn the revolving turret until you feel a click.
6. Using the focusing knob, lower the lens as close as possible to the prepared slide without actually making contact. Then, while looking through the eyepiece, turn the knob in the opposite direction until the image comes into focus.
7. When the room is dark with low intensity of natural or lamp light, or when the sight is not clear at a high magnification, turn the reflector. Then the light source lights automatically to enable observation.
8. The light source lamp is used with 2 'AA' (batteries) put in the back of base.

HOW TO USE AS A PROJECTION DEVICE

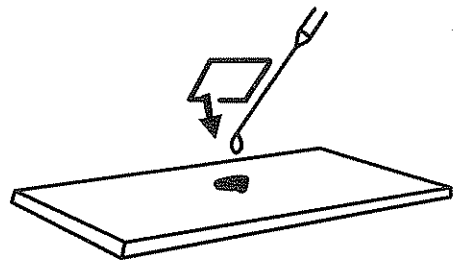
Remove the eyepiece and tilt the microscope so that the body tube is pointing at a white surface not more than one meter away. For best results view in a darkened room.



HOW TO MAKE A PREPARED SLIDE

If the given sample is not thin and transparent, it cannot be observed by the microscope as the light from the reflector or the light source does not pass through it. Fibres, pollen, wool, or salt can be observed easily and cover glass is optional. Clear samples are stained first with a drop or two drops of methylene blue, Eosin or other dyeing solutions available on the market. (Note: These are dyeing solutions and therefore could cause staining of clothing, carpets, and fabrics. Special care should be taken when handling these solutions.)

1) Temporary mount
Wipe the slide and cover glass clean. Thin sample with a razor blade or the micro-slicer (Note: This process should be under an adult's supervision. The blade is very sharp and has to be handled with extreme caution). Pick up thinned sample with tweezers and put it on the centre part of the glass slide. Put one drop of water on the sample with a dissecting needle, or if the sample is clear, use one drop of the above mentioned dyeing solutions (Note: The needle has a sharp point so handle with extreme caution) and then gently put on cover glass. Avoid to trap any air bubbles. Remove any excess water or dyeing solution with blotting paper. Now it is ready for observation. (Remember to wash your hands after doing the preparation and remember to dispose the dyeing solutions.)



2) Permanent mount
Wipe the slide and cover glass clean as above (Temporary mount). Proceed as above. However before covering the slide with the cover glass, add a few drops of gum media (not included in the set - available from store) or Canada balsam solution or transparent adhesive glue with a dissecting needle to the slide. Push down on the cover glass with tweezers to fix it in place and leave to dry for about a day.